

DYNAMICS OF SUSPENDED SEDIMENT PLUMES IN LAKE ONTARIO

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Type 1 Progress Report

ERTS-1

- a. Dynamics of Suspended Sediment Plumes in Lake Ontario

ERTS-1 Proposal No.: 342-4D

- b. GSFD ID: IN 058

- c. Statement and explanation of any problems that are impeding the progress of the investigation.

None.

- d. Discussion of the accomplishments during the reporting period and those planned for the next reporting period:

Ground truth was obtained during the September 19-21, 1973, satellite overpasses. A trip was made to the Stanford Research Institute, Menlo Park, CA during the period October 15-19. False-color composite 35-mm slides were prepared of all ERTS imagery available through September 3, 1973. In addition, areal and distance measurements were made using the ESIAC console developed by SRI scientists.

A talk covering all aspects of this research project was given at the Goddard Space Center on October 26, 1973. This presentation was part of an overall NASA review of funded ERTS projects.

- e. Discussion of significant results and their relationship to fundamental applications or operational problems.

An extensive clear-water plume emanating at the mouth of the Niagara River was detected on imagery obtained September 3, 1973 (frame No. 1407-15343). This plume (area over 500 sq. km.), which appears darker than the surrounding lake waters, extended 30 km offshore, or more than 60 percent across the width of the lake. The plume was 20 km across at its widest point. This plume is, by far, the largest generated by the Niagara River as viewed from the ERTS satellite.

A combination of high background lake turbidity relative to that of the Niagara River and gentle offshore (southerly) winds produced the well-defined turbidity feature.

- f. A listing of published articles, and/or papers, preprints, in-house reports, abstracts of talks, that were released during the report period:

None.

- g. Recommendation concerning practical changes in operations, additional investigative effort, correlation of efforts and results as related to maximum utilization of the ERTS system:

None.

- h. A listing by date of any changes in Standing Order Forms:

None.

- i. ERTS Image Description forms:

A new listing is in preparation.

- j. Listing by date of any changed Data Request forms submitted to Goddard Space Flight Center/NDPF during the reporting period:

October 11, 1973 (received imagery October 30, 1973)
October 29, 1973